

Application No. 09/589,675

In the Claims:

A complete listing of all claims follows, with current status of each claim.

Please amend claims 1, 9, 14, 17, 22, 24, 25, 26 and 33 as follows:

5bDI  
C1  
Claim 1. (currently amended) A device for irradiating tissue, comprising:  
a fluorescent element positioned to receive pump radiation having a narrow spectral band  
and responsively generate emitted radiation, the emitted radiation being diffuse and having peak  
emission outside said narrow spectral band; and  
~~a redirector for redirecting at the fluorescent element being adapted to deliver~~ least a  
portion of the diffuse emitted radiation toward a tissue target.

Claim 2. (original) The device of claim 1, wherein the fluorescent element comprises a  
fluorescent substance dispersed in a solid medium.

Claim 3. (original) The device of claim 2, wherein the fluorescent substance includes  
fluorescent ions, and the solid medium is selected from a group consisting of a solid-state crystal  
and a glass.

Claim 4. (original) The device of claim 2, wherein the fluorescent substance includes a  
fluorescent dye, and the solid medium is selected from a group consisting of a polymer and a  
glass.

Claim 5. (original) The device of claim 4, wherein the solid medium comprises a polymer  
selected from a group consisting of polymethyl methacrylate (PMMA) and polyvinyl toluene  
(PVT).

Claim 6. (original) The device of claim 1, wherein the fluorescent element comprises a liquid  
fluorescent dye solution.

Claim 7. (original) The device of claim 6, wherein the dye solution is static.

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Claim 8. (original) The device of claim 6, wherein the dye solution is continuously pumped through the fluorescent element.

subD1  
C2  
Claim 9. (currently amended) The device of claim 1, wherein the redirector comprises including a diffuse reflector for redirecting at least a portion of the diffuse emitted radiation toward the tissue target.

Claim 10. (original) The device of claim 9, wherein the diffuse reflector has a frustro-conical shape.

Claim 11. (original) The device of claim 1, wherein the pump radiation is generated by a frequency-doubled solid-state laser.

Claim 12. (original) The device of claim 1, wherein the pump radiation is delivered to the fluorescent element through an optical fiber.

Claim 13. (original) The device of claim 1, wherein the pump radiation is delivered to the fluorescent element through an articulated arm.

subD1  
C3  
Claim 14. (currently amended) The device of claim 1, wherein the redirector comprises including a reflective coating configured to reflect the emitted radiation toward the tissue target, the reflective coating being substantially transparent with respect to the pump radiation.

Claim 15. (original) The device of claim 1, further comprising a substantially transparent window having a proximal face positioned adjacent to the fluorescent element and a distal face <sup>contacting</sup> for ~~contacting~~ the target.

Claim 16. (original) The device of claim 15, further comprising means for cooling the window.

subD1  
C4  
Claim 17. (currently amended) A device for irradiating tissue, comprising:

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a fluorescent element positioned to receive pump radiation and responsively generate emitted radiation, the emitted radiation being diffuse and having substantially different spectral characteristics with respect to the incident radiation; and

a redirector for redirecting at least a portion of the diffuse emitted radiation toward a tissue target, wherein the redirector comprises a waveguide including a reflective entrance face and reflective walls, the entrance face having a substantially transmissive aperture formed therein for admitting pump radiation into the waveguide.

Claim 18. (original) The device of claim 17, wherein the reflective walls comprise a boundary between a waveguide core having a relatively high index of refraction and a cladding material having a relatively low index of refraction, the boundary causing total internal reflection of a portion of the emitted radiation.

Claim 19. (original) The device of claim 17, wherein the reflective walls comprise a reflective coating.

Claim 20. (original) The device of claim 17, wherein the reflective walls comprise a metallic coating.

Claim 21. (original) The device of claim 17, wherein the reflective walls comprise a dielectric coating.

Claim 22. (currently amended) A method for irradiating tissue, comprising the steps of:  
directing pump radiation within a narrow spectral band onto a fluorescent element;  
responsively generating emitted radiation at the fluorescent element, the emitted radiation being diffuse and having peak emission outside said narrow spectral band of the radiation;  
~~receiving a portion of the emitted radiation at a redirector; and~~  
~~redirecting the received~~ delivering at least a portion of the diffuse emitted radiation toward a tissue target.

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Claim 23. (original) The method of claim 22, wherein the step of directing incident radiation onto the fluorescent element includes directing incident radiation through an optical fiber.

*subD1*  
*C6*  
Claim 24. (currently amended) The method of claim 22, wherein the step of delivering includes receiving a portion of the emitted radiation at a redirector; and

redirecting the received portion of the diffuse emitted radiation includes by reflecting the emitted radiation from a diffuse reflector toward the tissue target.

Claim 25. (currently amended) The method of claim 22, wherein the step of delivering includes receiving a portion of the emitted radiation at a redirector; and

redirecting the received portion of the diffuse emitted radiation includes by reflecting the emitted radiation from a reflective coating, the reflective coating being substantially transparent with respect to the pump radiation.

*subD1*  
*C7*  
Claim 26. (currently amended) A method for irradiating tissue, comprising the steps of:

directing pump radiation onto a fluorescent element;

responsively generating emitted radiation at the fluorescent element, the emitted radiation being diffuse and having spectral characteristics substantially different from the incident radiation;

receiving a portion of the diffuse emitted radiation at a redirector; and

redirecting the received portion of the emitted radiation toward a tissue target, wherein the step of redirecting the emitted radiation includes reflecting the emitted radiation from the boundary between a waveguide core and cladding material, the cladding material having a substantially lower index of refraction than the waveguide core.

Claim 27. (original) The method of claim 22, wherein the tissue target comprises a vascular lesion.

Claim 28. (original) The method of claim 22, wherein the tissue target comprises a tumor.

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Claim 29. (original) The method of claim 22, wherein the tissue target comprises hair.

Claim 30. (original) The method of claim 22, wherein the tissue target comprises a pigmented lesion.

Claim 31. (original) The method of claim 22, further comprising the steps of cooling the tissue target.

Claim 32. (original) The method of claim 31, wherein the step of cooling the tissue target comprises:

providing a substantially transparent and thermally conductive window;  
placing a face of the window in thermal contact with the tissue target and  
cooling the window.

*sub*  
Claim 33. (currently amended) A system for irradiating tissue, comprising:

*C8*  
a pump radiation source for generating pump radiation having a narrow spectral band;  
a fluorescent element positioned to receive the pump radiation and responsively generate emitted radiation, the emitted radiation being diffuse and having peak emission outside said narrow spectral band; and  
a redirector for redirecting at least a portion of the diffuse emitted radiation toward a tissue target.

Claim 34. (previously cancelled).